

REMARKS

In an Office Action dated June 15, 2005, the Examiner rejected claims 1-3 and 5-9 under 35 U.S.C. §102(e) as being anticipated by Teo et al. (U.S. patent application publication no. 2002/0086708, hereinafter referred to as "Teo"). The Examiner rejected claims 13 and 15 under 35 U.S.C. §102(e) as being anticipated by Keskitalo (U.S. patent no. 5,893,033). The Examiner rejected claims 10-12 under 35 U.S.C. §103(a) as being unpatentable over Teo in view of Evans (U.S. patent no. 5,920,813), claims 14 and 16 under 35 U.S.C. §103(a) as being unpatentable over Keskitalo in view of Dam (U.S. patent no. 6,771,987), claim 17 under 35 U.S.C. §103(a) as being unpatentable over Keskitalo in view of Lin (U.S. patent no. 6,360,107), claim 18 under 35 U.S.C. §103(a) as being unpatentable over Keskitalo in view of Gans (U.S. patent no. 5,987,037), claims 20 and 21 under 35 U.S.C. §103(a) as being unpatentable over Keskitalo in view of Sollenberger (U.S. publication no. 2002/0135516), and claims 22-24 under 35 U.S.C. §103(a) as being unpatentable over Keskitalo in view of Evans. The Examiner objected to claims 4 and 19 as being dependent upon a rejected base claim but as being allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. The rejections are traversed and reconsideration is hereby respectfully requested.

The Examiner rejected claims 1-3 and 5-9 under 35 U.S.C. §102(e) as being anticipated by Teo. Claim 1, as amended, teaches a method for allocating a shared communication channel among multiple beams in a communication system comprising a switched beam antenna system, wherein the shared communication channel comprises multiple orthogonal codes. The method includes measuring a quality of a propagation channel associated with each beam of the multiple beams and allocating a first portion of the multiple orthogonal codes to a first beam of the multiple beams and a second portion of the multiple orthogonal codes to a second beam of the multiple beams, wherein the first and second portions are a function of the measured quality of the propagation channels between a base station and mobile stations in the first beam and between the base station and mobile stations in the second beam. These features are not taught by Teo.

Teo teaches an Orthogonal Frequency Division Multiplexed (OFDM) communication system. In an OFDM communication system, a frequency bandwidth is split into multiple contiguous frequency sub-carriers that are transmitted simultaneously. That is, the channels of an OFDM communication system are the sub-carriers, not orthogonal codes; Teo teaches nothing concerning how to allocate a shared communication channel comprising multiple orthogonal codes transmitted in a same frequency band. Further, Teo teaches an allocation of different sub-carriers to different beams, that is, a traffic sub-carrier to a first, fixed beam and a service sub-carrier(s) to a second, omni-directional or rotating beam. While Teo mentions that both the first beam and the second beam may include pilot sub-carriers, nowhere does Teo teach an allocation of a first portion of a pilot to a first beam and a second portion of a pilot to a second beam, let alone an allocation of portions of a pilot among multiple beams based on a measuring of a quality of a propagation channel associated with each beam of the multiple beams. In fact, nowhere does Teo even teach what would constitute a portion of a pilot. Therefore, in addition to the teachings of Teo concerning a fixed beam and a rotational beam rather than two fixed beams, Teo further fails to teach an allocation of different portions of a shared channel to multiple fixed beams.

As a result, Teo fails to teach the features of claim 1 of allocating a shared communication channel among multiple beams in a communication system comprising a switched beam antenna system, wherein the shared communication channel comprises multiple orthogonal codes and wherein the method includes measuring a quality of a propagation channel associated with each beam of the multiple beams and allocating a first portion of the multiple orthogonal codes to a first beam of the multiple beams and a second portion of the multiple orthogonal codes to a second beam of the multiple beams, wherein the first and second portions are a function of the measured quality of the propagation channels between a base station and mobile stations in the first beam and between the base station and mobile stations in the second beam. Accordingly, the applicant respectfully requests that claim 1 may now be passed to allowance.

Since claims 2-5, 10-12, and 25-29 depend upon allowable claim 1, the applicant respectfully requests that claims 2-5, 10-12 and 25-29 may now be passed to allowance.

The Examiner rejected claims 13 and 15 under 35 U.S.C. §102(e) as being anticipated by Keskitalo. Claim 13, as amended, teaches a base station subsystem operating in a switched beam antenna communication system that generates multiple predetermined, fixed beams and that includes a processor comprising an orthogonal code generator that generates multiple orthogonal codes, wherein multiple orthogonal codes are allocated to a shared communication channel and wherein the processor allocates a first portion of the plurality of orthogonal codes to a first array element of the multiple array elements and allocates a second portion of the plurality of orthogonal codes to a second array element of the multiple plurality of array elements, wherein the processor allocates the multiple orthogonal codes to the first and second array elements based on a propagation channel quality measurement associated with a first beam and a propagation channel quality measurement associated with a second beam of the multiple fixed beams. Nowhere does Keskitalo teach the features of claim 13 of allocating different portions of a shared communication channel to each of a first array element and a second array element of the multiple elements of an antenna array, wherein the portions of the shared communication channel are allocated to the first and second array elements based on a propagation channel quality measurement associated with a first beam of the multiple fixed beams and a propagation channel quality measurement associated with a second beam of the multiple fixed beams. Accordingly, the applicant respectfully requests that claim 13 may now be passed to allowance.

Since claims 14, 18-20, 22-24 and 30-34 depend upon allowable claim 13, the applicant respectfully requests that claims 14, 18-20, 22-24 and 30-34 may now be passed to allowance.

As the applicant has overcome all substantive rejections and objections given by the Examiner and has complied with all requests properly presented by the Examiner, the applicant contends that this Response, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the applicant respectfully solicits allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter.

Respectfully submitted,

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